

**ABSTRACT**

Gain setting of a receiving amplifier is performed by use of ASE light of a transmitting amplifier, without need of a particular light source. The gain setting is performed by detecting the necessity of gain setting when a receiving amplifier is turned on, requesting WDM transmission equipment in a preceding station to output ASE light; in a WDM transmission equipment of the preceding station, shutting off both passing-through light and added light, and outputting the ASE light corresponding to a predetermined number of wavelengths of signal light; in the receiving amplifier of the WDM transmission equipment in the station of interest, performing the gain setting by use of the ASE light; and on completion of the gain setting, in the WDM transmission equipment of the station of interest, shifting to receive an optical signal, and in the WDM transmission equipment of the preceding station, switching over to optical signal output.